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A contribution to the genus *Phradonoma* JACQUELIN DU VAL, 1859 from South Africa (Coleoptera: Dermestidae: Megatomini)

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ABSTRACT. *Phradonoma constantini* sp. n. and *Phradonoma magnum* sp. n. from South Africa are described, illustrated and compared with *P. interruptum* (THUNBERG, 1781), *P. funestum* (REITTER, 1881) and *P. nobile* (REITTER, 1881). *Trogoderma interruptum* (THUNBERG, 1781) is newly transferred to the genus *Phradonoma* JACQUELIN DU VAL, 1859. *Phradonoma humerale* (REITTER, 1881) is proposed as a junior synonym of *Trogoderma interruptum* (THUNBERG, 1781). A key to the South African species of the genus *Phradonoma* is given.

Key words: entomology, taxonomy, distribution, new combination, new synonymy, new species, Coleoptera, Dermestidae, *Phradonoma*, South Africa.

INTRODUCTION

The genus *Phradonoma* JACQUELIN DU VAL, 1859 contains 7 species from the Afrotropical region (REITTER 1881, MROCZKOWSKI 1968, HÁVA 2003); from South Africa are known *P. funestum* (REITTER, 1881), *P. interruptum* (THUNBERG, 1781) and *P. nobile* (REITTER, 1881). The present paper deals with the descriptions of two new species recently collected in South Africa.

The Universites Zoologiska Institut, Uppsala, Sweden, was so friendly to loan the type specimens of some dermestid species described by THUNBERG and GYLLENHAL.

Among them was the holotype of *Dermestes interruptus* THUNBERG, 1781, which later was transferred by MROCKOWSKI to the genus *Trogoderma* DEJEAN, 1821. Nevertheless this female specimen belongs to the genus *Phradonoma* JACQUELIN DU VAL, 1859 and it is conspecific with *Phradonoma humerale* (REITTER, 1881), so the latter becomes a junior synonym of *Phradonoma interruptum* (THUNBERG, 1781) n. comb. REITTER never mentioned *Dermestes interruptus* THUNBERG in his papers nor in his identification keys, so likely he didn't know about it.

The following acronyms refer to the collections in which the examined material is deposited:

JHAC – collection of Jiri HÁVA, Prague, Czech Republic; AHEC – collection of Andreas HERRMANN, Stade, Germany, RCOC – collection of Robert CONSTANTIN, Saint-Lô, France; TMSA - Transvaal Museum, Pretoria, South Africa, BMNH - The Natural History Museum (formerly British Museum of Natural History), London, United Kingdom, UZIU - Universites Zoologiska Institut, Uppsala, Sweden.

All type specimens were labelled with red, printed labels bearing the text as follows: “HOLOTYPE [or PARATYPE, respectively] *genus_name species_name* sp. n. Jiří Háva & Andreas Herrmann det. 2003“.

RESULTS

The genus belongs to the *Trogoderma* group genera, from other genera in the group it differs in the following characters:

1(2) Anterior tibia with spines along shaft.

Phradonoma JACQUELIN DU VAL

2(1) Anterior tibia without spines along shaft.

3(4) Antennal cavity closed; male club with 4-8 segments; I-III antennal segments of the latter group.

Trogoderma DEJEAN

4(3) Antennal cavity open.

5(6) Male club with 8 segments; I-III antennal segments not of the latter group.

Cacoleptus SHARP

6(5) Male club with 5 segments.

Trogoparvus HÁVA

Phradonoma funestum* (REITTER, 1881)Trogoderma funestum* REITTER, 1881:41*Phradonoma funestum*: MROCZKOWSKI, 1968:112*Phradonoma funestum*: HÁVA, 2003:125

MATERIAL EXAMINED

S. Africa, Western Cape, 30 km North Clanwilliam, along RN7, on *Euryops tenuissimus*, 31°59'S, 18°44'E, 85 m, 8.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, Clanwilliam, East plato, Pakhuis Pass, 10.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, 14 km East Clanwilliam, Pakhuis Pass, West side, 10.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, 30 km North Clanwilliam, along RN7, on *Euryopscursive tenuissimus*, 31°59'S, 18°44'E, 85 m, 8.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, 30 km Sud Vanrhynsdorp, Gifberg Pass, river bed, 8.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, Cederberg, Devil's kloof, 30 km South Clanwilliam, 7.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, Cederberg, Oukraal se kloof, 14 km SE Clanwilliam, 7.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, 42 km North Clanwilliam, 1 km N Trawal, farm Drietfontein, 8.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, Cederberg, Oukraal se kloof, 14 km SE Clanwilliam, 6.10.2002, R. Constantin lgt., 1 female.

DISTRIBUTION

Species known only from South Africa.

Phradonoma interruptum* (THUNBERG, 1781) comb. n.Dermestes interruptus* THUNBERG, 1781:6*Trogoderma interruptum*: MROCZKOWSKI, 1968:102*Trogoderma interruptum*: HÁVA, 2003:135*Trogoderma humerale* REITTER, 1881:41 **syn. n.***Phradonoma humerale*: MROCZKOWSKI, 1968:112*Phradonoma humerale*: HÁVA, 2003:126

TYPE MATERIAL

Type labelled [red printed label]: Uppsala Univ. Zool. Mus. \ Thunbergsaml. Nr. 5216 \ *Dermestes interruptus* \ Mus. Thunb. TYP". Type deposited in UZIU.

MATERIAL EXAMINED

S Africa, W Cape, S of Lamberts Bay, 7-9.10.1999, M. Snízek lgt., 1 female; S. Africa, Western Cape, Cederberg, Oukraal se kloof 14 km SE Clanwilliam, 32°18'S, 19°00'E, 240 m, 7.10.2000, R. Constantin lgt., 2 females; South Africa, Western Cape, Swartberg Pass, 13.10.2000, 1 female; S Africa, Western Cape, Seweweekspoort, lower part, on *Pelargonium* bush, 12-10-2000, R. Constantin

lgt.; S Africa, Western Cape, Swartberg Pass, North side on *Pelargonium* bush, 13-10-2000, R. Constantin lgt.; S. Africa, Western Cape, Cederberg, Devil's kloof, 30 km South Clanwilliam, 7.10.2000, R. Constantin lgt., 1 female; S. Africa, Western Cape, 20 km SE Vanrhynsdorp, Gifberg pass, 4.10.2002, R. Constantin lgt., 1 female; S. Africa, Western Cape, 35 km North of De Rust, Meiringspoort, upper part, 16.10.2002, R. Constantin lgt., 1 female.

DESCRIPTION OF MALE

Male specimens differ from females only in the form of antennal club. Aedeagus (Fig. 14). Other morphological characters are identical.

DISTRIBUTION

Species known only from South Africa.

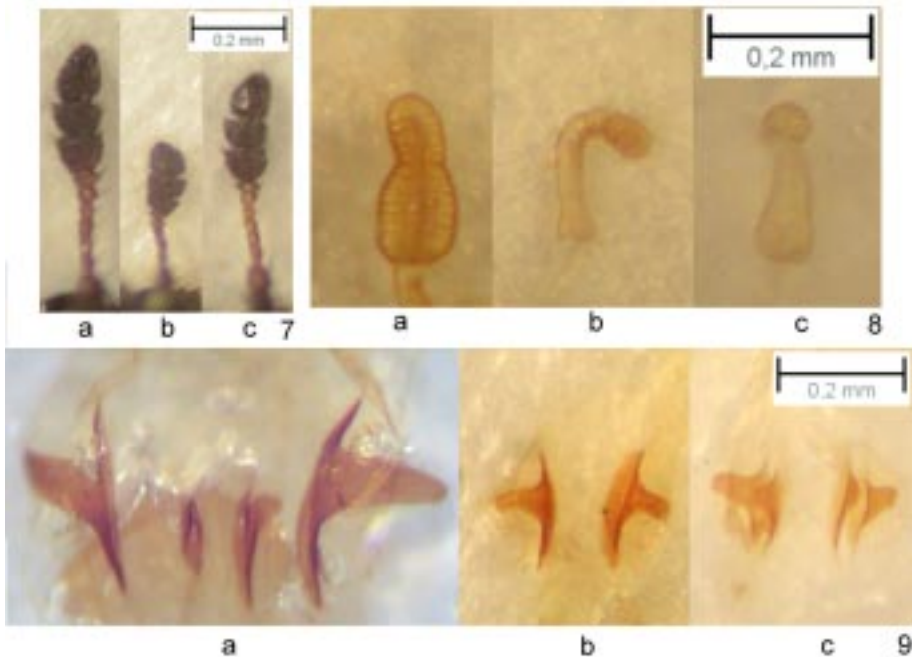


1-6. Habitus: 1 - *Phradonoma constantini* sp. n., 2 - *Phradonoma constantini*, variability, 3 - *Phradonoma magnum* sp. n., 4 - *Phradonoma interruptum* (THUNBERG, 1781), 5 - *Phradonoma nobile* (REITTER, 1881), 6 - *Phradonoma funestum* (REITTER, 1881)

***Phradonoma constantini* sp. n.**

TYPE MATERIAL

Holotype (female) labelled: "S. Africa, Western Cape, , 10 km E of Seweweekspoort Boshuiskloof, on Ruschia, 33°19'S, 21°31'E, 531 m, 12-10-2000, R. Constantin lgt.". 13 paratypes labelled: "RSA, W Cape, Greyton env., 22.11.2002, M. Snizek lgt." (1 female); "S. Africa, Western Cape, Cederberg, Devil's kloof, 30 km South Clanwilliam, 32°25'S, 19°05'E, 895 m, 7.10.2000, R. Constantin lgt." (1 female); "S. Africa, Western Cape, Cederberg, Oukraal se kloof, 14 km SE of Clanwilliam, 32°18'S, 19°00'E, 240 m, 6.10.2002, R. Constantin lgt." (1 female); "S. Africa, Western Cape, Swartberg pass, North side, path to Bothasnek, 33°20'S, 22°04'E, 1410 m, 17.10.2002, R. Constantin lgt." (1 female); "S. Africa, Western Cape, 10 km E of Seweweekspoort, 12 km W of Gamkapoortdam, 33°20'S, 21°31'E, 656 m, 18.10.2002, R. Constantin lgt." (1 female); "S. Africa, Western Cape, Seweweekspoort, lower Pelargonium bush, 33°26'S, 21°24'E, 580 m, 22.10.2003, R. Constantin" (1 female); "S. Africa, West Cape, Botrivier 5 km West Houhoek pass 2 km W, 34°12'S, 19°08'E, 250 m, 03.11.2003, R. Constantin" (2 females); "S. Africa, Western Cape, Clanwilliam 10 km South road to Algeria, 32°14'S, 18°56'E,



7. Antenna of females: a – *P. magnum* sp. n.; b – *P. constantini* sp. n.; c – *P. interruptum* (THUNBERG, 1781); 8. Bursa copulatrix: a – *P. magnum* sp. n.; b – *P. constantini* sp. n.; c – *P. interruptum* (THUNBERG, 1781); 9. Receptaculum seminis: a – *P. magnum* sp. n.; b – *P. constantini* sp. n.; c – *P. interruptum* (THUNBERG, 1781)

160 m, 21.10.2003, R. Constantin" (1 female); "S. Africa, Western Cape, 15 km North of de Rust, Meiringspoort, Waterval. 33°23'S, 22°33'E, 620 m, 01.11.2003, R. Constantin" (1 female); "S.Africa. R.E.Turner. Brit. Mus. 1924-466. Cape Province, Montagu. 1.-21.Oct.1924." (1 female); "S.Africa. R.E.Turner. 1920-447. Ceres, Cape Province. 1,500 ft. 27.x.-1.xi.1920." (1 female); "S.Africa. R.E.Turner. 1920-342. Lion's Head, Cape Town. Aug. 1920." (1 female).

Holotype deposited in TMSA, paratypes in BMNH, JHAC, RCOC and AHEC.

DESCRIPTION OF HOLOTYPE

Female. Body brownish-black, oval. Body length 2.8 mm, width 1.2 mm. Head coarsely punctate with erect black pubescence, maxillary palpi brown, eyes large with microsetae, antennal segments I-VIII brown, 11-segmented, with 3-segmented black club (Fig. 7b). Antennal fossa very broad. Ocellus on front present. Pronotum brownish-black, finely punctate with long black erect pubescence, lateral margins not visible from above. Scutellum triangular with short black pubescence. Cuticle on elytra brown, with one orange-red fasciae in anterior half (Fig. 1). Each elytron with large bump on humeri; anterior part densely foveolate, other parts finely punctate; pubescence erect, black. Pro- and metasternum with short black pubescence. Legs brown, anterior tibia with black spines along shaft. Abdominal sternites finely punctate with short black pubescence. Bursa copulatrix (Fig. 8b); Receptaculum seminis (Fig. 9b).

Male unknown.

VARIABILITY

Cuticle of paratype specimen black, body length 2.5-4.0 mm, width 1.8-2.1 mm.

REMARKS

Some female paratype specimens differ from the holotype in the following characters: cuticle dark brownish, fascia of the elytra big and hazy, covering the whole shoulder. These differences probably concern various populations of the species and therefore this "variety" is not named.

DISTRIBUTION

South Africa: Western Cape province.

ETYMOLOGY

The name is dedicated to our colleague Dr. Robert CONSTANTIN, Saint-Lô, France, who has been involved for many years in the study of the South African Malachiidae, Dasytidae and Melyridae.

DIFFERENTIAL DIAGNOSIS

The new species looks quite similar to *P. interruptum* (THUNBERG, 1781), but differs in the form of the antenna and genitalia. All morphological differences are figured.

***Phradonoma magnum* sp. n.**

TYPE MATERIAL

Holotype (female) labelled: "S. Africa, Western Cape, Cederberg, Oukraal se kloof, 14 km Sud Clanwilliam, 32°18'S, 19°00'E, 240 m, 7-10-2000, R. Constantin". Holotype deposited in TMSA.

DESCRIPTION OF HOLOTYPE

Female. Body black, oval. Body length 4,4 mm, width 2,3 mm. Head coarsely punctate with erect black pubescence, maxillary palpi brown, eyes large with



10-14. *Phradonoma interruptum* (THUNBERG, 1781) comb. n.: 10 – habitus of holotype (female), 11 – antenna of holotype (female), 12 – habitus of male, 13 – antenna of male, 14 – aedeagus

microsetae, antennal segments I-VIII brown, 11- segmented, with 3- segmented black club (Fig. 7a). Antennal fossa very broad. Ocellus present on front . Pronotum black, coarse and densely punctate with long black erect pubescence, lateral margins not visible from above. Scutellum triangular with short black pubescence. Cuticle on elytra black, with one orange-red fasciae in anterior half (Fig. 3). Each elytron with large bump on humeri; anterior part densely foveolate, other parts less densely punctate; pubescence erect, black. Pubescence on fasciae long and yellow. Pro- and metasternum with short black pubescence. Legs dark-brown, anterior tibia with black spines along shaft. Bursa copulatrix (Fig. 8a); Receptaculum seminis (Fig. 9a).

Male unknown.

VARIABILITY

Unknown.

DISTRIBUTION

South Africa: Western Cape province.

ETYMOLOGY

The name refers to the big size of the species.

DIFFERENTIAL DIAGNOSIS

The new species looks quite similar to *P. interruptum* (THUNBERG, 1781), but differs in the shape of the body, the dull surface and the genitalia. All morphological differences are figured.

KEY TO THE SPECIES OF THE GENUS *PHRADONOMA* OCCURRING IN SOUTH AFRICA

- 1(8) Elytra bicolorous.
- 2(3) Elytra brownish-black except for three (sometimes only two) reddish, transverse bands (Fig. 5).
P. nobile (REITTER, 1881)
- 3(2) Elytra brown or black with one orange-red fascia in the anterior part of each elytron.
- 4(5) Club of the antenna oval (Fig. 7b), receptaculum seminis elongate and bent, body size smaller, length 2.5-4.0 mm, fascia of the elytra covered with dark hairs.
P. constantini sp. n.
- 5(4) Club of the antenna elongate (Figs 7a, c), receptaculum seminis short, broad and straight, body size bigger, length 3.3-4.8 mm, fascia of the elytra broad and often covered with bright hairs.
- 6(7) Tibia dark brownish, body elongate and smaller. Elytra and pronotum shiny. Bursa copulatrix very small (Fig. 8c). Receptaculum seminis (Fig. 9c).
P. interruptum (THUNBERG, 1781)

7(6) Tibia black, body broad and bigger. Elytra and pronotum not shiny, puncturation of the pronotum extremely dense. Bursa copulatrix very big (Fig. 8a).

P. magnum sp. n.

8(1) Elytra unicolorous, black, without fasciae, pubescence unicolorous brownish-black (Fig. 6).

P. funestum (REITTER, 1881)

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